

1 1. (Three Times Amended) A magnetic recording system including a head, a  
2 magnetic media with perpendicular magnetic polarity transitions written thereon and  
3 circuitry adapted to receive a readback pulse with a substantially Lorentzian pulse shape  
4 from said head and to detect said substantially Lorentzian pulse shape, said head for  
5 transferring data between the magnetic media and an exterior environment, said head  
6 comprising:

7 a write element for inducing said perpendicular magnetic polarity transitions into  
8 a surface of said magnetic media during a write operation;

9 a yoke [disposed within said write element, said yoke] having a read gap for  
10 sensing said perpendicular magnetic polarity transitions; and

11 a magnetoresistive read element mounted in a flux flow path of said yoke,  
12 wherein said magnetoresistive read element produces a readback pulse having a  
13 substantially Lorentzian pulse shape in response to one of said perpendicular magnetic  
14 polarity transitions.

1 17. (Twice Amended) A magnetic storage device comprising:

2 a magnetic media having magnetic polarity transitions perpendicularly recorded  
3 thereon;

4 a read element for reading said perpendicular magnetic polarity transitions, said  
5 read element including:

6 a flux guide having a read gap, said read gap used for sensing said  
7 perpendicular magnetic polarity transitions and for producing a magnetic flux in said flux  
8 guide in response to each of said perpendicular magnetic polarity transitions, and

9 a magnetoresistive element mounted in said flux guide for producing a  
10 readback pulse having a substantially Lorentzian pulse shape in response to said magnetic  
11 flux; and

12 circuitry adapted to receive a readback pulse having a substantially Lorentzian  
13 pulse shape from said magnetoresistive element and to detect that said readback pulse has  
14 said substantially Lorentzian pulse shape.

1 30. (Amended) A magnetic storage device comprising:  
2 a magnetic storage media;  
3 a head including a write element for inducing perpendicular magnetic polarity  
4 transitions in said magnetic storage media during a write operation, a yoke, and a  
5 magnetoresistive read element mounted in a flux flow path of said yoke and recessed from  
6 said magnetic storage media for producing readback pulses with substantially Lorentzian  
7 pulse shapes in response to and in one-to-one correspondence with said perpendicular  
8 magnetic polarity transitions during a read operation; and  
9 circuitry adapted for receiving readback pulses with substantially Lorentzian pulse  
10 shapes from said magnetoresistive read element, wherein said circuitry includes a detector  
11 designed to detect Lorentzian pulse shapes.

1 34. (Amended) The magnetic storage device, as claimed in Claim 30, wherein  
2 said [circuitry includes a] detector includes means for detecting [designed to detect]  
3 Lorentzian pulse shapes.

~~Claims 35-41, line 1, change "34" to --30--.~~